We claim:

1. A fiber optic system for monitoring properties of mediums, said system comprising:
    a) a light source emitting optical signal;
    b) an optical signal distribution means connected to the light source and distribution the optical signal received from the light source;
    c) a position measuring means for holding one of the output of the optical signal distribution means;
    d) a refractive index matching liquid, immersed in it second output of the optical signal distribution means; and
    e) an optical powermeter connected to the optical signal distribution means for measuring the optical signal reflected from the medium.
2. The system as claimed in claim 1, wherein the light source for feeding the input port of the optical signal distribution means is selected from the group consisting of He-Ne laser.
3. The system as claimed in claim 1, wherein the optical signal distribution means is a fiber optic bi-directional coupler.
4. The system as claimed in claim 1, wherein the light source is connected to the optical signal distribution means through a microscope objective, providing efficient coupling light into the optical fiber, and a precision fiber positioner, providing alignment of the fiber with respect to the microscope objective for efficient launching light into the fiber.
5. The system as claimed in claim 1, wherein the freefiber end of the second output port is dipped in the refractive index matching liquid to avoid Fresnel reflection which will interfere with the measurements.
6. The system as claimed in claim 1, wherein the position measuring means is a micro-positioning vertical movement stage.
7. The system as claimed in claim 1, wherein the optical power meter is connected to the optical signal distribution means through a photo detector.
8. The system as claimed in claim 1, wherein the system is based on Fresnel reflection.
9. The system as claimed in claim 1, wherein mediums are immiscible liquids.
10. The device as claimed in claim 1, wherein the optical signal propagation is secure and without any cross talk or interference problems.
11. The system as claimed in claim 1, wherein the optical signal is unaffected by the presence of electrical signals.
12. The system as claimed in claim 1, wherein all the connections are through optical fibers.

13. The system as claimed in claim 12, wherein the optical fibers are made of dielectric material that is non-corrosive, durable and immune to any Electro Magnetic Interference (EMI) and RFI.
14. The system as claimed in claim 13, wherein the system exhibits an accuracy of atleast 99 %.
15. A method for measuring the thickness of the mediums, said method comprising:
    f) immersing first output of the optical signal distribution means in the medium;
    g) immersing the second output of the optical signal distribution means in the refractive index matching liquid;
    h) emitting light from the light source to the optical signal distribution means;
    i) monitoring the position of position measuring means; and
    j) detecting the reflected signal using the photo detector and optical powermeter reflected from the medium.
16. The method as claimed in claim 10, wherein position of the position measuring means is monitored before the immersion of first output in the medium.
17. The method as claimed in claim 10, wherein the reflected signal is detected in the optical powermeter.
18. The method as claimed in claim 10, wherein the reflected signal is dependent upon the medium surrounding the fiber core of the first output.
19. The method as claimed in claim 10, wherein the change in the reflected signal indicates change in the medium.
20. The method as claimed in claim 10, wherein the position difference of the position measuring means when there is a difference in the reflected signal detected in the powermeter indicates the thickness of the medium.
21. The method as claimed in claim 10, wherein the reflected optical signal is Fresnel reflected signal.
22. The method as claimed in claim 1, wherein mediums are immiscible liquids.
23. The method as claimed in claim 1, wherein the method exhibits an accuracy of atleast 99%.